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FILE 'SCISEARCH' ENTERED AT 14:00:06 ON 18 APR 2001
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=> set abbr on perm
SET COMMAND COMPLETED

=> s microarray device
L1 5 MICROARRAY DEVICE

=> d scan
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FSEARCH, FSORT or SORT.

=> d l1 abs 1-5

L1 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2001 ACS
AB Equipment for the detection of specific DNA sequences, by using DNA microarray technol. The detected sequences can be important for clin. diagnosis of cancer genes, or bacterial or viral genes and for therapy planning. The efficiency of the method is increased by combining it with the polymerase chain reaction (PCR).

L1 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2001 ACS
AB The measurement of work function is a particularly effective method for the characterization of surfaces because of the sensitivity of the parameter to interfacial structure, modification and overall chem. Accordingly, techniques for the anal. of work function offer a powerful tool for monitoring surface chem. changes, esp. for situations involving the immobilization of new moieties at the interface. In the present paper, we describe the performance of a new, modified scanning Kelvin microprobe which is capable of the tandem measurement of contact potential and surface topog. with resolns. of 1 mV and 10 nm, resp. The lateral resoln. is 1 .mu.m. The instrument has been applied to the study of substrates modified by the attachment of biochem. macromols. such as oligonucleotides and DNA. This preliminary work confirms the great

potential of the technique in the study of biocompatibility, macromol. structure and ***microarray*** ***devices*** .

L1 ANSWER 3 OF 5 MEDLINE
AB The measurement of work function is a particularly effective method for the characterization of surfaces because of the sensitivity of the parameter to interfacial structure, modification and overall chemistry. Accordingly, techniques for the analysis of work function offer a powerful tool for monitoring surface chemical changes, especially for situations involving the immobilization of new moieties at the interface. In the present paper, we describe the performance of a new, modified scanning Kelvin microprobe which is capable of the tandem measurement of contact potential and surface topography with resolutions of 1 mV and 10 nm, respectively. The lateral resolution is 1 micron. The instrument has been applied to the study of substrates modified by the attachment of biochemical macromolecules such as oligonucleotides and DNA. This preliminary work confirms the great potential of the technique in the study of biocompatibility, macromolecular structure and ***microarray*** ***devices*** .

L1 ANSWER 4 OF 5 SCISEARCH COPYRIGHT 2001 ISI (R)
AB The measurement of work function is a particularly effective method for the characterization of surfaces because of the sensitivity of the parameter to interfacial structure, modification and overall chemistry. Accordingly, techniques for the analysis of work function offer a powerful tool for monitoring surface chemical changes, especially for situations involving the immobilization of new moieties at the interface. In the present paper, we describe the performance of a new, modified scanning Kelvin microprobe which is capable of the tandem measurement of contact potential and surface topography with resolutions of 1 mV and 10 nm, respectively. The lateral resolution is 1 mum. The instrument has been applied to the study of substrates modified by the attachment of biochemical macromolecules such as oligonucleotides and DNA. This preliminary work confirms the great potential of the technique in the study of biocompatibility, macromolecular structure and ***microarray*** ***devices*** .

L1 ANSWER 5 OF 5 SCISEARCH COPYRIGHT 2001 ISI (R)
AB Programmable force vector fields can be used to control a variety of flexible planar parts feeders such as massively parallel microactuator arrays or transversely vibrating (macroscopic)plates. These new automation designs promise great flexibility, speed and dexterity-we believe they may be employed to position, orient, singulate, sort, feed, and assemble parts. However since they have only recently been invented programming and controlling them for manipulation tasks is challenging. When apart is placed on our devices, the programmed vector field induces a force and moment upon it. Over time, the part may come to rest in a dynamic equilibrium state. By chaining sequences of force fields, the equilibrium states of a part in the field may be cascaded to obtain a desired final state. The resulting strategies require no sensing, and enjoy efficient planning algorithms

This paper begins by describing new experimental devices that can implement programmable force fields. In particular; we describe our progress in building the M-CHIP (Manipulation CHIP), a massively parallel array of programmable micromotion pixels. Both the M-CHIP and other ***microarray*** ***devices*** , as well as macroscopic devices such as transversely vibrating plates, may be programmed with vector fields, and their behavior predicted and controlled using our equilibrium analysis. We demonstrate lower bounds (i.e., impossibility results) on what the devices cannot do, and results on a classification of control strategies yielding design criteria by which well-behaved manipulation strategies may be developed. We provide sufficient conditions for programmable fields to induce well-behaved equilibria on every part placed

on our devices. define composition operators to build complex strategies from simple ones, and show the resulting fields are also well behaved We discuss whether fields outside this class can be useful and free of pathology.

Using these teals, we describe new manipulation algorithms. In particular we improve existing planning algorithms by a quadratic factor; and the plan length by a linear factor: Using our new and improved strategies, we show how to simultaneously orient and pose any part, without sensing,from an arbitrary initial configuration. Wk relax earlier dynamic and mechanical assumptions to obtain more robust and flexible strategies.

Finally, we consider parts feeders that can only implement a very limited ''vocabulary'' of vector fields (as opposed to the pixel-wise programmability assumed above). We show how to plan and execute parts posing and orienting strategies for these devices, bur with a significant increase in planning complexity and some sacrifice in completeness guarantees. We discuss the trade-off between mechanical complexity and planning complexity.

=> d l1 ibib 1-5

L1 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2001:28534 CAPLUS
DOCUMENT NUMBER: 134:81730
TITLE: PCR ***microarray*** ***device*** for clinical diagnosis of cancer, bacterial and viral genes
PATENT ASSIGNEE(S): Arneth, Borros, Germany
SOURCE: Ger. Gebrauchsmusterschrift, 3 pp.
CODEN: GGXXFR
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| DE 20003464 | U1 | 20010111 | DE 2000-20003464 | 20000226 |

L1 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:791918 CAPLUS
TITLE: Surface immobilized biochemical macromolecules studied by scanning Kelvin microprobe
AUTHOR(S): Cheran, Larisa-Emilia; McGovern, Mark E.; Thompson, Michael
CORPORATE SOURCE: Department of Chemistry, University of Toronto, Toronto, ON, M5S 3H6, Can.
SOURCE: Faraday Discuss. (2000), 116(Bioelectrochemistry), 23-34
CODEN: FDISE6; ISSN: 0301-7249
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 22
REFERENCE(S):
(1) Baikie, I; Mater Res Soc Symp Proc 1993, V309, P35 CAPLUS
(2) Baikie, I; Rev Sci Instrum 1991, V62(3), P725 CAPLUS
(4) Cheran, L; Analyst 1999, V124, P961 CAPLUS
(9) Kumar, C; Rev Sci Instrum 1996, V67(3), P805 CAPLUS
(10) Lundgren, S; Rev Sci Instrum 1995, V66(7), P3976 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 5 MEDLINE
ACCESSION NUMBER: 2001124795 MEDLINE
DOCUMENT NUMBER: 21041235
TITLE: Surface immobilized biochemical macromolecules studied by scanning Kelvin microprobe.
AUTHOR: Cheran L E; McGovern M E; Thompson M
CORPORATE SOURCE: Department of Chemistry, University of Toronto, 80 St. George Street, Toronto, Ontario, Canada M5S 3H6.
SOURCE: FARADAY DISCUSSIONS, (2000) (116) 23-34; discussion 67-75. Journal code: BKT. ISSN: 1359-6640.
PUB. COUNTRY: England: United Kingdom
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200102

L1 ANSWER 4 OF 5 SCISEARCH COPYRIGHT 2001 ISI (R)
ACCESSION NUMBER: 2000:864290 SCISEARCH
THE GENUINE ARTICLE: 372RZ
TITLE: Surface immobilized biochemical macromolecules studied by scanning Kelvin microprobe
AUTHOR: Cheran L E (Reprint); McGovern M E; Thompson M
CORPORATE SOURCE: UNIV TORONTO, DEPT CHEM, 80 ST GEORGE ST, TORONTO, ON M5S 3H6, CANADA (Reprint)
COUNTRY OF AUTHOR: CANADA
SOURCE: FARADAY DISCUSSIONS, (SEP 2000) No. 116, pp. 23-34. Publisher: ROYAL SOC CHEMISTRY, THOMAS GRAHAM HOUSE, SCIENCE PARK, MILTON RD, CAMBRIDGE CB4 0WF, CAMBS, ENGLAND

ISSN: 0301-7249.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: English
REFERENCE COUNT: 21
*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*

L1 ANSWER 5 OF 5 SCISEARCH COPYRIGHT 2001 ISI (R)
ACCESSION NUMBER: 1999:94773 SCISEARCH
THE GENUINE ARTICLE: 159TX
TITLE: Programmable force fields for distributed manipulation, with applications to MEMS actuator arrays and vibratory parts feeders
AUTHOR: Bohringer K F (Reprint); Donald B R; MacDonald N C
CORPORATE SOURCE: UNIV WASHINGTON, DEPT ELECT ENGN, 234 EE CSE BLDG, BOX 352500, SEATTLE, WA 98195 (Reprint); DARTMOUTH COLL, DEPT COMP SCI, SUDIKOFF LAB 6211, HANOVER, NH 03755; CORNELL UNIV, DEPT ELECT ENGN, ITHACA, NY 14853; CORNELL NANOFABRICAT FACIL, ITHACA, NY 14853
COUNTRY OF AUTHOR: USA
SOURCE: INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH, (FEB 1999) Vol. 18, No. 2, pp. 168-200. Publisher: SAGE PUBLICATIONS INC, 2455 TELLER RD, THOUSAND OAKS, CA 91320.
ISSN: 0278-3649.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: ENGI
LANGUAGE: English
REFERENCE COUNT: 75
*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*

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E2       276482     PLURALITY/BI
E3            0 --> PLURALITY MULTI ANALYTE? DEVICE?/BI
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E5           14     PLURALITYOF/BI
E6            1     PLURALITYTY/BI
E7           14     PLURALIY/BI
E8            1     PLURALIYT/BI
E9           46     PLURALIZATION/BI
E10          16     PLURALIZE/BI
E11          30     PLURALIZED/BI
E12           1     PLURALIZES/BI

=> s e2 and device
L2        89610 PLURALITY/BI AND DEVICE

=> s l2 and sequence?
L3         1025 L2 AND SEQUENCE?

=> s l3 and l1
L4            0 L3 AND L1

=> s l3 and multi analyt???
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=> s l3 and multi analyt?
L5            1 L3 AND MULTI ANALYT?

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=> d l5 ibib 1

L5   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2001 ACS
ACCESSION NUMBER:         2001:31723  CAPLUS
DOCUMENT NUMBER:          134:83073
TITLE:                    Capillary electrophoresis apparatus and detector array
INVENTOR(S):              Melman, Paul; Tabasky, Marvin
PATENT ASSIGNEE(S):       Corning, Incorporated, USA
SOURCE:                   PCT Int. Appl., 38 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

      PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
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      WO 2001002846      A1   20010111       WO 2000-US17919  20000629
          W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
              CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
              HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
              LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
              SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,
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          RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
              DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
              CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
PRIORITY APPLN. INFO.:                       US 1999-345904   19990701
REFERENCE COUNT:          7
REFERENCE(S):             (2) Craighead, H; US 5867266 A 1999 CAPLUS
                          (3) Kambara Hideki; US 5516409 A 1996 CAPLUS
                          (4) Melman, P; US 5903348 A 1999 CAPLUS
```

(5) Otsuka Pharma Co Lt[redacted] EP.0793098 A 1997 CAPLUS
(6) Rossi, M; US 5736410 A 1998 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> FIL STNGUIDE

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| USPT | l14 and l12 | 23 | L15 |
| USPT | quantitat? and devic? | 1663 | L14 |
| USPT | s l12 1nd l9 | 1359514 | L13 |
| USPT | (dna sequence?)[AB] AND (device?)[AB] | 361 | L12 |
| USPT | (dna?)[AB] AND (device?)[AB] | 1 | L11 |
| USPT | (multianalyt?)[AB] AND (device?)[AB] | 0 | L10 |
| USPT | (sequence?)[AB] AND (device?)[AB] | 324 | L9 |
| USPT | (microarray)[AB] AND (device?)[AB] | 0 | L8 |
| USPT | (microarray)[AB] AND (sequenc?)[AB] | 1 | L7 |
| USPT | ('us17919'\| 'wo2001002846')[PN] | 0 | L6 |
| USPT | 17919 | 17 | L5 |
| USPT | us17919 | 0 | L4 |
| DWPI | Melman et al | 493048 | L3 |
| DWPI | 2001002846 | 0 | L2 |
| DWPI | wo 2001002846 | 587542 | L1 |

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